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Operating Instructions
for the
PORTABLE TAKE-UP ASSEMBLY
(Part No. 1-119-E-001)



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NOTICE

In certain sections of this manual, it is stated that maintenance personnel must install an adapter bar at the wind-up end of a processor before the portable take-up assembly can be mated with the processor. Furthermore, Appendix A of this manual contains detailed instructions on installation of the adapter bar. However, these sections and Appendix A apply only when the portable take-up assembly is purchased without the processor. When both a processor and portable take-up unit are purchased together, then the adapter bar will be installed on the processor before it is shipped. Thus, these particular sections and Appendix A are to be ignored in such cases.

PTU-1

TABLE OF CONTENTS

	<u>Page</u>
List of Illustrations	ii
Section 1 Introduction and Description	1
1.1 Purpose	1
1.2 Installation	1
1.3 Specifications	1
1.4 Major Components	2
1.4.1 General	2
1.4.2 Mechanical Components	3
1.4.3 Electrical Components	4
Section 2 Operation	6
2.1 Mating Take-Up Assembly to Processor	6
2.2 Preparing Machine for Operation	7
2.3 Spool Changing	7
Section 3 Trouble Shooting	9
Section 4 Maintenance	10
4.1 Cleaning	10
4.2 Replacing Cutter Blade	10
4.3 Circuitry	10
Appendix A Installation of Adapter Bar at Wind-Up End of a VERSAMAT Processor	A-1
Appendix B Spare Parts List	B-1
Appendix C Parts List	C-1
Appendix D Supporting Counterweight of Take-Up Assembly During Transportation	D-1

Revised May 1965

LIST OF ILLUSTRATIONS

<u>Figure</u>	<u>Title</u>	<u>Page</u>
1	Over-All View of Portable Take-Up Assembly	11
2A	Portable Take-Up and Model 11C VERSAMAT Before Mating	12
2B	Portable Take-Up Correctly Mated with the Model 11C VERSAMAT Processor	12
3	Film Transport Side of Portable Take-Up Assembly	13
4	Close-Up of Control Panel, Cutter Assembly, and Safelight Viewer	14
5	Portable Take-Up Assembly with Protective Cover Removed	15
6	Thread-Up Diagram	16
A1	Adapter Bar Assembly	A-2
A2	End View of a Model 11C VERSAMAT Showing Mounting Positions for Adapter Bar and Side View with Bar Correctly Mounted to Processor	A-3
A3	Diagrams Showing Mounting Hole Location for Adapter Bar and Relocation of Exhaust Duct	A-5
A4	Disk Cover	A-6

PTU-1

SECTION 1

INTRODUCTION AND DESCRIPTION

1.1 PURPOSE

The portable take-up assembly shown in Figure 1 was designed to permit continuous processing on the Versamat and other processors without having to stop the processor to change the take-up spool. The accessory provides sufficient time to cut the processed film and change the take-up spool while operating continuously at processing speeds up to 25 feet per minute. In addition, up to 1000 feet of film can be wound on a Dexter-type spool positioned in the take-up assembly.

1.2 INSTALLATION

The portable take-up assembly needs at least five feet at the end of a processor for operation and attachment procedures. The electrical power cord of the take-up assembly can be plugged into a three-hole receptacle used for accessories on the processing machine or it can be plugged into a receptacle in the wall and operated independently of the processor power supply.

An adapter bar must be installed on the wind-up end of the processor at the bottom so that the portable take-up can be mated with the processor. An adapter bar kit containing the additional parts (screws, washers, etc.) necessary to attach the adapter bar to the processor is supplied with each portable take-up. Maintenance personnel should be contacted to install this bar on the processor. Appendix A contains detailed instructions for this installation.

1.3 SPECIFICATIONS

Dimensions

Height: 53 inches

Depth: 28-1/4 inches

Width: 25-1/4 inches

Weight

350 pounds

PTU-1

Power Consumption	115 volts ac, 60 cycles, 1 amp
Cutter-Viewer Dimensions	Length: 9-1/2 inches Width: 6 inches
Idler Roller Dimensions	Diameter: 2 inches Length: 11 inches
Rotary Film Storage Device	Film Capacity: 6 feet Maximum Time Allowed for Film Cutting, Spool Changing: 20 seconds at 15 feet per minute 41 seconds at 8 feet per minute
Take-Up Spool Storage Capacity	Length: 1000 feet Width: Standard film widths from 70mm to 9.5 inches

1.4 MAJOR COMPONENTS

1.4.1 General

The basic component of the take-up assembly is a mounting plate made of 5/8-inch thick aluminum jig stock. The mounting plate is two feet wide and four feet high with its top front corner cut at a 45-degree angle. The cutter assembly, the film inspection viewer, and the electrical controls are mounted on this 45-degree cut. One side of this plate supports six idler rollers, a rotary film storage device, and the take-up spindle. The other side holds the torque motor for the take-up spindle, the counterweight for the rotary film storage device, and the electrical components used to control the take-up torque motor.

The take-up assembly has two angular-steel bases (the larger one attached to the lower right front corner of the unit, the smaller to the lower left front corner). Fastened to the larger base are two alignment pins which mate with two bushings in the adapter bar attached to the processor. Two casters are attached to the larger base while a third caster is mounted on the smaller base. When the pins on the larger base assembly are mated with the bushings in the processor adapter bar, accurate alignment between the take-up assembly and the processor is assured. This alignment permits proper film tracking during processing operations. (Figure 2A shows the portable take-up before it is mated with a Model 11C VERSAMAT Processor and Figure 2B illustrates the portable take-up correctly mated to this processor.)

PTU-1

1.4.2 Mechanical Components

1.4.2.1 Rotary Film Storage Device. To permit film cutting and spool replacement without stopping the processor, the take-up assembly is equipped with a rotary storage device and four idler rollers. The storage device shown in Figure 3 is a center-pivoted, counter-weighted bar with an idler roller at each end. During operation, the film path is a single strand around all six idler rollers (two on the rotating bar and four stationary). Whenever film travel onto the take-up spool is stopped, the relaxed tension on the film allows the storage bar to rotate (due to its counterweight) and extend the film path from the single strand to five strands. This storage device holds enough film during film cutting and spool replacement to allow continuous operation of the processor at speeds up to 25 feet per minute (fpm). When the processor is operating at 15 fpm, a normal speed for processing duplicating material, a 20-second time interval is provided; when operating at 8 fpm, a normal speed for processing original negatives, a period of 41 seconds is provided for film cutting and spool changing. As explained in Section 1.4.3 (Electrical Components), the pivot point of the bar is connected to an electrical system that increases power to the torque motor when the bar rotates to the storage position. After the film has been cut and attached to the new take-up spool, the torque motor operates at a higher speed to remove the film from the storage device and thus reduce the number of film strands from five to the single strand used in normal operation.

1.4.2.2 Idler Rollers. All eight idler rollers (see Figure 3) are identical. These rollers are made from Synthane tubing which is ball-bearing mounted on the shafts attached to the mounting plate. These rollers offer little friction or inertia to impede film travel because they are made of a lightweight material.

1.4.2.3 Take-Up Spindle. This spindle shown in Figure 3, is driven by a torque motor which is controlled by an electrical system that increases or decreases power according to the position of the rotary film storage bar. This spindle is designed to accept Dexter take-up spools only. The torque motor which drives the spindle is de-activated by contacting the footswitch at the rear of the assembly (see paragraph 1.4.2.5).

1.4.2.4 Cutter Assembly. The assembly is used to clamp the film and thus stop its travel, and to cut the film across a frame line that is correctly positioned over the slot in the viewer. The unit consists of a cutter bar and a knife contained in a sliding block that travels across this bar. (The cutting knife used is an injector type razor blade which can be easily replaced when it becomes dull). One end of the bar is hinged to the viewer table and the opposite end has a clamp so that the bar can be secured to the other side of the viewer table during film cutting and raised during film wind-up. The underside of the cutter is covered with a soft rubber strip to hold the film securely in position while a cut is being made. The cutter assembly and its various components are shown in Figure 4.

1.4.2.5 Footswitch. A footswitch is positioned at the rear of the portable take-up to facilitate the spool changing operation (Section 2.3 of this manual). When it is necessary to de-activate torque motor drive on the take-up spindle during film cutting and spool replacement, this footswitch is depressed. The spindle will not rotate as long as contact is maintained with the footswitch.

1.4.2.6 Aluminum Sheet Guard. This guard is mounted to the entire rear end of the take-up assembly to protect all cantilevered idler rollers from damage that could result from improper use of the rollers as lifting handles.

1.4.3 Electrical Components

1.4.3.1 Electrical Control Panel. This unit shown in Figure 4 has the following three controls:

- a. POWER Switch: The main ON-OFF switch which energizes the torque motor circuit. This switch must be turned ON before the other two controls can be activated.
- b. VIEWER Switch: The ON-OFF switch for the take-up roll inspection safelight.
- c. ILLUMINATION Control: The ON-OFF and illumination intensity knob for the film inspection viewer on the cutter assembly. The knob is rotated clockwise until a click is heard to turn on the light and is then rotated in the same direction to increase intensity of the light.

PTU-1

1.4.3.2 Magnetic Servo System. This system has a potentiometer attached to the pivot point of the rotary storage bar. This potentiometer varies power through a stabilizing network to a saturable reactor. The stabilizing network is designed to eliminate the tendency of the rotary storage bar to oscillate. The saturable reactor, which powers the take-up spindle torque motor drive, consists of a transformer which amplifies a small input current to a level necessary to energize the torque motor. Figure 5 shows the magnetic servo system.

Whenever the rotary storage bar moves off the empty position, additional power is applied to the torque motor on the take-up spindle to increase the take-up speed and thus return the storage arm to its empty position.

1.4.3.3 Film Inspection Viewer. A light to locate frame lines for cutting is provided by a viewer. This viewer, which is a 6 x 9 1/2 inch electroluminescent panel, provides a soft, diffused light whose intensity can be varied by the ILLUMINATION control knob on the control panel. The viewer panel is enclosed in a metal frame and covered with clear plastic with a slot across its center for the path of the cutting blade. The entire assembly, together with the cutter assembly and control panel, is mounted at a 45-degree angle for operator convenience. Figure 4 shows this viewer.

1.4.3.4 Take-Up Roll Inspection Safelight. An electroluminescent panel, smaller than that used on the film inspection viewer but otherwise identical, is mounted beneath the cutter table to provide low intensity illumination for examining the take-up roll during operation. Power to this panel (item 4, Figure 3) is controlled by an ON-OFF toggle switch located at the control panel. No provision for varying the light level is included.

CAUTION

Use discretion when turning ON this inspection light.
When materials possessing extra sensitivity to light
are being processed or handled in the same room, it
is best to leave the inspection light turned OFF.

SECTION 2

OPERATION

2.1 MATING TAKE-UP ASSEMBLY TO PROCESSOR

Before the assembly is mated to the processor, an adapter bar must be mounted to the wind-up end of the processor. Detailed instructions for installing this adapter bar are contained in Appendix A. After installing the adapter bar, the procedure listed below is to be followed in mating the take-up assembly with the processor:

- a. Move the take-up assembly up to the processor to check alignment of the pins on front of the take-up assembly base with the corresponding bushings in the adapter bar on the processor. If the pins do not align with the bushings, then adjust the leveling screws on the bottom of the processor to obtain proper alignment. If these screws are raised or lowered at one end, be sure to re-level the processor by adjusting the screws at the other end.

CAUTION

Do not use the spindle or idler rollers of the portable take-up to lift, push, or pull the unit. Use the handle aperture in the mounting plate just below the electrical control panel.

- b. Plug the electrical power cord of the take-up assembly either in (a) the three-hole receptacle located about waist level on the right side of the processor end plate or (b) in a comparable receptacle on the wall.
- c. Mate the pins on the take-up assembly with the corresponding holes in the adapter bar by using handle to push the assembly against the processor. Be sure the base on which the pins are mounted is positioned against the bushings in the adapter bar.

2.2 PREPARING PORTABLE TAKE-UP FOR OPERATION

After the assembly is mated to the processor, the steps below must be carried out to prepare the portable take-up for operation:

- a. Place an empty Dexter spool on the spindle of the take-up assembly.
- b. Thread the processor with suitable leader material and, as the end of the leader emerges from the dryer exit, grasp the end and thread it through the take-up assembly as shown in Figure 6, Thread-Up Diagram.
- c. Tape the leader to the core of the Dexter spool.
- d. Turn ON the following electrical controls (see Figure 3) at the control panel on the take-up assembly:
 1. The main POWER switch
 2. The VIEWER switch for the take-up roll inspection safelight

CAUTION

When materials possessing extra sensitivity to light are being processed or handled in the same room, it is best to leave the VIEWER switch for the inspection safelight OFF.

2.3 SPOOL CHANGING

During continuous processing of large film rolls it will be necessary to change the Dexter spool after it has accumulated 1000 feet of film. To change a full spool without having to stop the processor, follow the steps below:

- a. Rotate the ILLUMINATION control knob clockwise to turn ON the film inspection viewer and then adjust this knob for suitable illumination.
- b. Grasp the Dexter spool and rotate it in the direction (clockwise or counter-clockwise) required to center a film frame line over slot in clear plastic sheet on the cutter assembly.
- c. Clamp cutter bar in position and move the sliding block which contains cutter blade across bar.

Revised July 1965

PTU-1

WARNING

After the film is cut, slide the block back across the bar so that the exposed edge of the blade is covered by its safety guard.

- d. Depress the footswitch to de-energize the take-up spindle torque motor; then remove full spool and place an empty one on the take-up spindle.
- e. Release contact with footswitch to activate torque motor drive on take-up spool.
- f. With one hand, grip the film held by the cutter bar; with the other hand, unclamp and raise bar.
- g. Thread film to empty spool and tape film end to spool core.
- h. Turn OFF the ILLUMINATION control knob for the film inspection viewer.

Revised July 1965